

WHAT IS CLAIMED IS:

1. A method of producing a photovoltaic panel, comprising the steps of:

producing a light-transmitting, photovoltaic-element holding member which holds, along a reference surface, a plurality of photovoltaic elements each of which includes a P-type layer and an N-type layer, and

forming, on one of opposite sides of the photovoltaic-element holding member, a first electrode which is electrically connected to the respective P-type layers of the photovoltaic elements, and a second electrode which is electrically connected to the respective N-type layers of the photovoltaic elements.

2. A method according to claim 1, wherein the step of producing comprises

producing a light-transmitting member which has, along the reference surface, a plurality of photovoltaic-element holding portions, and

holding, with the photovoltaic-element holding portions, the photovoltaic elements, respectively.

3. A method according to claim 1, wherein the step of producing comprises

forming a light-transmitting layer of a light-transmitting material before curing,

embedding at least respective portions of the

photovoltaic elements in the light-transmitting layer, and

curing the light-transmitting layer in a state in which said at least respective portions of the photovoltaic elements are embedded in the light-transmitting layer.

4. A method according to claim 3, wherein the step of embedding comprises

temporarily holding, with a temporarily holding surface of a temporarily holding member, the photovoltaic elements, and

moving the temporarily-holding member holding the photovoltaic elements, toward the light-transmitting layer, till the respective portions of the photovoltaic elements are embedded in the light-transmitting layer.

5. A method according to claim 4, wherein the step of moving comprises pressing, in a state in which the photovoltaic elements contact the light-transmitting layer, the temporarily holding member and the light-transmitting layer against each other.

6. A method according to claim 3, wherein the step of forming the light-transmitting layer comprises supplying the light-transmitting material to a container and thereby forming the light-transmitting layer.

7. A method according to claim 1, wherein the

step of producing comprises

arranging, according to a predetermined rule, a plurality of transparent spherical members, along a reference plane, and

holding, with the arranged spherical members, the photovoltaic elements, such that the photovoltaic elements are positioned on the spherical members.

8. A method according to claim 4, wherein the temporarily-holding member is formed of an elastic material, and wherein the step of temporarily holding comprises stretching the temporarily-holding member holding the photovoltaic elements, to change a space between each pair of adjacent photovoltaic elements of said plurality of photovoltaic elements.

9. A photovoltaic panel, comprising:

a plurality of photovoltaic elements each of which includes a P-type layer and an N-type layer;

a first electrode which is provided on one of opposite sides of a first plane intersecting the photovoltaic elements and which is electrically connected to the respective P-type layers of the photovoltaic elements;

a second electrode which is provided on said one of the opposite sides of the first plane and which is electrically connected to the respective N-type layers of the photovoltaic elements; and

a light-transmitting layer which is formed of a

light-transmitting material and which is provided on the other side of the first plane and which fills at least a space between the first plane and a second plane which is parallel to the first plane and is tangent to the photovoltaic elements.

10. A photovoltaic panel according to claim 9, wherein the first plane divides each of the photovoltaic elements into a first portion whose volume is smaller than 50 % of a volume of said each photovoltaic element, and a second portion whose volume is greater than 50 % of the volume, and wherein the light-transmitting layer is provided on the other side of the first plane on which the respective second portions of the photovoltaic elements are located.

11. A photovoltaic panel according to claim 9, wherein the light-transmitting layer has a shape having two plane surfaces parallel to each other, and wherein one of the two plane surfaces is substantially parallel to the first plane and the other plane surface is substantially parallel to the second plane.

12. A method of producing a photovoltaic panel, comprising the steps of:

producing a light-transmitting, photovoltaic-element holding member which holds a plurality of photovoltaic elements along a reference surface, and

forming at least one electrode which is electrically connected to the photovoltaic elements held by the photovoltaic-

element holding member,

wherein the step of producing comprises
forming a light-transmitting layer of a light-transmitting
material before curing,

embedding at least respective portions of the photovoltaic
elements in the light-transmitting layer, and

curing the light-transmitting layer in a state in which said
at least respective portions of the photovoltaic elements are
embedded in the light-transmitting layer.

13. A method according to claim 12, wherein the
step of embedding comprises embedding more than 50 % of a
volume of each of the photovoltaic elements, in the light-
transmitting layer.

14. A method according to claim 12, wherein the
step of embedding comprises embedding more than 50 % of an
area of junction of a P-type layer and an N-type layer of each of
the photovoltaic elements, in the light-transmitting layer.

15. A method according to claim 12, wherein the
step of embedding comprises embedding, in the
light-transmitting layer, the photovoltaic elements such that an
electric-power generating efficiency per unit area of the
photovoltaic panel is higher than a predetermined value.

16. A method according to claim 12, wherein the

step of curing comprises at least one of heating the light-transmitting layer, cooling the light-transmitting layer, and exposing the light-transmitting layer to light.

17. A method according to claim 12, wherein the step of embedding comprises

temporarily holding, with a temporarily holding surface of a temporarily holding member, the photovoltaic elements,

moving the temporarily-holding member holding the photovoltaic elements, toward the light-transmitting layer, till the respective portions of the photovoltaic elements are embedded in the light-transmitting layer.

18. A method according to claim 17, wherein the step of temporarily holding comprises temporarily fixing the photovoltaic elements to an adhesive layer which is formed on the temporarily holding surface of the temporarily holding member.

19. A method according to claim 17, wherein the step of temporarily holding comprises temporarily holding, with an arranging member, the photovoltaic elements on the temporarily holding surface of the temporarily holding member.

20. A method according to claim 17, wherein the temporarily-holding member is formed of an elastic material, and

wherein the step of temporarily holding comprises stretching the temporarily-holding member holding the photovoltaic elements, to change a space between each pair of adjacent photovoltaic elements of said plurality of photovoltaic elements.

21. A method according to claim 20, wherein the step of moving the temporarily-holding member comprises moving the temporarily-holding member toward the light-transmitting layer, while preventing contraction of the temporarily-holding member stretched.

22. A method according to claim 17, wherein the step of temporarily holding comprises

arranging, in a container, the photovoltaic elements into a single layer such that the photovoltaic elements contact with each other, and

pressing the temporarily holding member against the photovoltaic elements arranged in the single layer in the container.

23. A method according to claim 17, wherein the step of moving comprises pressing, in a state in which the photovoltaic elements contact the light-transmitting layer, the temporarily-holding member and the light-transmitting layer against each other.

24. A method according to claim 17, wherein the

step of producing further comprises removing, after the step of curing, the temporarily holding member from the light-transmitting layer cured.

25. A method according to claim 12, wherein the step of forming the light-transmitting layer comprises supplying the light-transmitting material to a container and thereby forming the light-transmitting layer.

26. A method according to claim 12, wherein the step of forming said at least one electrode comprises forming two electrodes on one of opposite sides of the photovoltaic-element holding member.

27. A method according to claim 12, wherein the step of forming said at least one electrode comprises forming two electrodes on opposite sides of the photovoltaic-element holding member, respectively.